CRPRC

Investigator

Last Name: 
First: 
Middle: 
e-mail: 
Department: 
Phone / Fax: 
After hrs. #: 

Contact

Last Name: 
First: 
Middle: 
e-mail: 
Department: 
Phone: 
After hrs. #: 

Species (common names): 

Rhesus monkeys 

Number: 

32 

Source: 

CRPRC 

Project Title 

Endocrine disruption in adolescent monkeys—extension 

Overnight housing location: 

Day use only: 

Animals will be maintained by: 

[X] Vivarium [ ] Investigator (If investigator maintained, attach husbandry SOP's.) 

Procedures: Provide a one or two sentence layman's description of the procedures employed on the animals in this project. This information will help the animal care staff understand any conditions they may encounter while caring for your animals.

Female rhesus monkey treated with endocrine disrupting agents during adolescence (protocol 8468) will be maintained at CRPRC for one-year while awaiting decisions on proposals submitted to continue their evaluation. Blood samples will be obtained at 3-month intervals to track changes in blood parameters that were found to persist after discontinuation of dosing. 

Special Husbandry Requirements: Describe any special requirements your animals have with respect to food, water, temperature, humidity, light cycles, caging type, bedding, or any other conditions of husbandry. 

No special requirements.

Other instructions for animal care staff: (check applicable entries)

Sick Animals 

[X] Call Investigator [X] Call Investigator

[ ] Clinician to treat [ ] Bag for disposal

[ ] Terminate [ ] Necropsy

Dead Animals 

[X] Call Investigator

[ ] Save for Investigator [ ] OK to use pesticides

[ ] Necropsy [ ] No Pesticides in animal area

Pest Control

Hazardous Materials (only if in the animal room):

Infectious Agents? [ ] Yes [X] No Agent(s): 

Radioisotopes? [ ] Yes [X] No Agent(s): 

Chemical Carcinogens? [ ] Yes [X] No Agent(s): 

Toxic Chemicals? [ ] Yes [X] No Agent(s):
Funding source: USEPA  
Previously approved?  [ ] Yes  [ X ] No  
Previous protocol number (if any):  8468  

What Veterinarian or veterinary clinic will provide care for your animals? (check one)  
[ ] Lab Animal Health Clinic (2-0514)  
[ ] VMTH Large Animal Field Service (2-0292)  
[ X ] California Primate Research Center (2-0447)  
[ ] Another Veterinarian  

If you checked “Another Veterinarian”, please provide:  
Veterinarian:  
Address:  
Day phone:  
Emergency phone:  
Email:  

If your veterinarian is not affiliated with one of the three service units listed above, please contact the campus veterinarian, 2-2357 (email pctlillman@ucdavis.edu) for current information about training and record keeping requirements.

Summary of Procedures:  
a) Briefly describe the overall intent of the study. Include in your description a statement of your hypothesis, the objectives and significance of the study. Your target audience is a faculty member from a discipline unrelated to yours. Do not use jargon.

Financial support is currently being sought to evaluate the adult health of these rhesus monkeys that were exposed to endocrine disrupting treatments during adolescence. In order to maintain the cohort under controlled environmental conditions, a new IAUCAAC protocol has been prepared. The only intervention we anticipate is quarterly blood sampling. The animals will be fed and cared for according to the standard procedures at CRPRC, including pair-housing, enrichment, daily health checks and veterinary treatment for health problems.

b) Procedures employed in this project:

Please check the appropriate boxes if any of these procedures will be employed in your project:

[ ] Monoclonal Antibody Production  
[ ] Food or water restriction  
[ ] Special diets; food or water treatment.

[ ] Polyclonal Antibody Production  
[ ] Non-recovery surgical procedures  
[ ] Induced illness, intoxication, or disease.

[ ] LD 50 or ID50 studies.  
[ ] Survival surgical procedures  
[ ] Death as an endpoint (see i below)

[ X ] catheters, blood collection, intubation  
[ ] Multiple survival surgery  
[ ] Trapping, banding or marking wild animals

[ ] Prolonged restraint. (8 hrs+)

[ ] Behavioral modification.  

[ ] Fasting prior to a procedure.  
[ ] Aversive conditioning.  

** If this protocol only describes antibody production, you may use the attached antibody production page in lieu of completing section c below.
c) Describe the use of animals in your project in detail, with special reference to any of procedures checked above. Include any physical, chemical or biological agents that may be administered. List each study group, and describe all the specific procedures that will be performed on each animal in each study group. Use terminology that will be understood by individuals outside your field of expertise. (Note: This cell will expand to whatever length you require. You may make this section as long as you wish, but try to be concise. Some projects may require one or two pages.)

The young monkeys (36-48 months of age) will be maintained indoors in a single cage room in the bottom row of cages. They will be pair-housed according to standard CRPRC protocols. Blood samples will be taken quarterly to for a CBC, flow cytometry enumeration circulating lymphocyte populations and hormones (estrogen, cortisol, insulin, thyroid). Blood samples (5 mL) will be obtained from the cepahalic or saphenous vein from monkeys restrained in the pull-back cage. Other evaluations may be added by amendment as data from the preceding protocol is summarized and analyzed.

d) Study Groups and Numbers: Define, in the form of a table, the numbers of animals to be used in each experimental group described above. The table may be presented on a separate page as an attachment to this protocol if you prefer. The Normal format should be three columns: Study Group, Procedure, Number of animals. The number of rows should follow from the number of study groups; you may add as many rows as you require. The chart must fully account for the number of animals you intend to use under this protocol. Assign each group to an invasiveness category according to the chart below.

<table>
<thead>
<tr>
<th>Group</th>
<th>Procedures / Drugs</th>
<th>Number of Animals</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>No drugs or treatments will be administered. Groups were established by previous drug treatment.</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>DES 0.5 mg/kg</td>
<td></td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>MXC 50 mg/kg</td>
<td></td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>MXC 25 mg/kg</td>
<td></td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>
### Categories of invasiveness

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
</table>
| **1** | Little or no discomfort or stress  
Examples: domestic flocks or herds being maintained in simulated or actual commercial production management systems; the short-term and skilful restraint of animals for purposes of observation or physical examination; blood sampling; injection of material in amounts that will not cause adverse reactions by the following routes: intravenous, subcutaneous, intramuscular, intraperitoneal, or oral. |
| **2** | Minor stress or pain of short duration  
Examples: cannulation or catheterization of blood vessels or body cavities under anesthesia; minor surgical procedures under anesthesia, such as biopsies or laparoscopy; short periods of restraint beyond that required for simple observation or examination, but consistent with minimal distress |
| **3** | Moderate to severe distress  
Examples: major surgical procedures conducted under general anesthesia, with subsequent recovery; prolonged (several hours or more) periods of physical restraint; induction of behavioral stresses such as maternal deprivation |
| **4** | Severe pain near, at or above the pain tolerance threshold  
Examples: exposure to noxious stimuli or agents whose effects are unknown; exposure to drugs, chemicals, or infectious agents at levels that markedly impair physiological systems and which cause death, severe pain, or extreme distress; Surgical experiments which have a high degree of invasiveness. |

Further descriptions of these categories are included in the instructions following this document.

e) **Rationale for species and numbers:** How did you determine that 1) the species choice was appropriate and 2) the number of animals in each study groups was the minimum number necessary to achieve sound scientific results?

> Maintenance of this cohort will prevent recreation of the experimental groups for follow-up studies. The group sizes were previously selected for protocol 8468 as being adequate to detect biologically significant effects on a variety of evaluative parameters such as CBC, hematology, T-cell populations, bone density, short term memory and reproductive tract morphology. These same group sizes will be appropriate for followup evaluations in these areas.

f) **Surgery:** If the project involves survival surgery, where will the surgery be conducted?

Building:  
Room:  
Who will be the surgeon?

g) **Anesthetics, Analgesics, Tranquilizers, Neuromuscular blocking agents:**

Post procedural analgesics should be given whenever there is possibility of pain or discomfort that is more than slight or momentary. If postoperative analgesics are not to be given, justify the practice under part (i) below.

Provide the following information about any of these drugs that you intend to use in this project.

<table>
<thead>
<tr>
<th>Species</th>
<th>Drug</th>
<th>Dose (mg/kg)</th>
<th>Route</th>
<th>When and how often will it be given?</th>
</tr>
</thead>
</table>

h) **Neuromuscular blocking agents** can conceal inadequate anesthesia and therefore require special justification. If you are using a neuromuscular blocking agent, please complete the following:

Why do you need to use a neuromuscular blocking agent?

What physiologic parameters are monitored during the procedure to assess adequacy of anesthesia?
Under what circumstances will incremental doses of anesthetics-analgesics be administered?

i) Adverse effects:
Describe any potential adverse effects of the experiment on the animals (such as pain, discomfort; reduced growth, fever, anemia, neurological deficits; behavioral abnormalities or other clinical symptoms of acute or chronic distress or nutritional deficiency)

> The animals will experience discomfort during blood draws. There is a possibility of hematomas.

How will the signs listed above be ameliorated or alleviated? If signs are not to be alleviated or ameliorated by means of post-operative analgesics or other means, explain why this is necessary.

> All samples will be drawn by trained and experienced CRPRC personnel.

Note: if any unanticipated adverse effects not described above do occur during the course of the study, a complete description of those effects and the steps taken to mitigate them must be submitted to the committee as an amendment to this protocol.

Is death an endpoint in your experimental procedure?  
[ ] Yes  [X] No

(Note: “Death as an endpoint” refers to acute toxicity testing, assessment of virulence of pathogens, neutralization tests for toxins, and other studies in which animals are not euthanized, but die as a direct result of the experimental manipulation). If death is an endpoint, explain why it is not possible to euthanize the animals at an earlier point in the study. If you can euthanize the animals at an earlier point, describe the clinical signs which will dictate that an animal will be euthanized.

j) Literature search for alternatives and unnecessary duplication:

This section is specifically required by Federal law. You are required to conduct a literature search to determine that either 1) there are no alternative methodologies by which to conduct this study, or 2) there are alternative methodologies, but these are not appropriate for your particular study. “Alternative methodologies” refers to reduction, replacement, and refinement (the three R’s) of animal use, not just animal replacement. You must also show that the study is not unnecessarily duplicative of other studies.

What was the date on which you conducted this search?  
10-12/01

List the databases searched or other sources consulted (there should be more than one). Include the years covered by the search.

<table>
<thead>
<tr>
<th>Database Name</th>
<th>Years Covered</th>
<th>Keywords / Search Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pubmed</td>
<td>All</td>
<td>Primate adolescence estrogen</td>
</tr>
<tr>
<td>PIF (primate information service)</td>
<td>All</td>
<td>adolescence</td>
</tr>
</tbody>
</table>

What were your findings with respect to alternative methodologies?

Primates have a unique pattern of adolescent development and regulation of ovarian cyclicity and so are the most appropriate species for extrapolation to humans in this area. Some hypotheses derived from the nonhuman primate study may be amenable to study in mice and in cell culture. We are currently developing pilot work in these areas.
Has this study been previously conducted?  

[ ] Yes  [x] No

If the study has been conducted previously, explain why it is scientifically necessary to replicate the experiment.


k) **Disposition of animals:** At what point in the study, if any, will the animals be euthanized?

Monkeys will be assigned to another IUCAAC protocol or release to the breeding colony.

l) **Methods of euthanasia:** Even if your study does not involve killing the animals, you should show a method that you would use in the event of unanticipated injury or illness. If anesthetic overdose is the method, show the agent, dose, and route.

<table>
<thead>
<tr>
<th>Species</th>
<th>Method</th>
<th>Drug</th>
<th>Dose (mg/kg)</th>
<th>route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhesus Monkeys</td>
<td>Drug overdose</td>
<td>pentobarbital</td>
<td>60</td>
<td>i.v.</td>
</tr>
</tbody>
</table>

m) **Surplus animals:** What will you do with any animals not euthanized at the conclusion of the project?

Return to colony
n) Project Roster: Please provide the names of all the individuals who will work with animals on this project. This page will not be made available to the public. Give either the University Employee ID # or a valid UC Davis email address so that we can document training and occupational health compliance for regulatory agencies. Include all investigators, student employees, post-doctoral researchers, staff research associates, post-graduate researchers and laboratory assistants who will actually work with the animals. You don't need to include the staff of the vivarium in which your animals will be housed.

The principal investigator is responsible for keeping this roster current. If any staff is added or subtracted from this project, you must amend the protocol by sending the campus veterinarian a memo describing any changes.

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Middle Name</th>
<th>UC ID Number or SSN</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Occupational Health Program:
Supervisors must enroll their employees in the campus Occupational Health Program if the workers are at increased risk of illness or injury (such as allergy, physical injury, or infectious disease) because of their work. Enroll workers by having them complete an "Animal Contact History Form", available from Employee Health Services (phone 752-2330). For further information, visit our web site at [http://clueless.ucdavis.edu/health/](http://clueless.ucdavis.edu/health/) or read the UC Davis Policy & Procedure Manual 290-25.

Training:
Supervisors are responsible for ensuring that their employees are adequately trained, both in the specifics of their job and in the requirements of the Federal Animal Welfare Act. EH&S offers free, basic wet labs in laboratory animal handling and techniques, and lecture format classes in the requirements of the Animal Welfare Act. To schedule a class for your unit, contact EH&S at 2-2364. Autotutorials are also available on the world wide web at [http://clueless.ucdavis.edu/](http://clueless.ucdavis.edu/).
Assurances for the Humane Care and Use of Vertebrate Animals:

Principal Investigator’s Statement:

I have read and agree to abide by the UC Davis Policy and Procedure Manual section 290-30 (Animal Use and Care). This project will be conducted in accordance with the ILAR Guide for the Care and Use of Laboratory Animals, and the UC Davis Animal Welfare Assurance on file with the US Public Health Service. (These documents are available from the Campus Veterinarian and at http://ehs.ucdavis.edu/). I will abide by all Federal, state and local laws and regulations dealing with the use of animals in research.

I will advise the Animal Use and Care Administrative Advisory Committee in writing of any significant changes in the procedures or personnel involved in this project.

_________________________  ______________________  ______________________
Principal Investigator        Rank / Title               Date

** Conditions necessary for Committee Approval:

Final Disposition of this protocol:

_________ Approved

_________ Not Approved

_________ Withdrawn by Investigator

Date of Action: _____ / _____ / _____

I verify that the Institutional Animal Care and Use Committee of the University of California, Davis, acted on this protocol as shown above.

_________________________  ______________________
Campus Veterinarian         Date